

For **Assignment/Lab** questions provided below, each student is required to submit a standard Lab report with the following headings:

1. **Problem understanding**
2. **List of JavaScript concepts used**
3. **Flow diagram or logic steps**
4. **Source code**
5. **Output Screenshots**

Note: All the students are required to use Vanilla Javascript

Assignment 1

Smart Calculator with History

Problem Statement

Design a calculator that:

- Performs basic arithmetic operations
- Stores last 5 calculations
- Displays calculation history dynamically
- Allows clearing history

Additional Constraints

- Handle invalid input (e.g., divide by zero)
 - Use an array to store history
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Assignment 2

Student Marks & Grade Analyzer

Problem Statement

Create a system where:

- Student details are stored as objects
- Marks for multiple subjects are entered

- Total, percentage, and grade are calculated
 - Result is displayed in a table
 - Highlight pass/fail rows using CSS via JS
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Assignment 3

Dynamic To-Do List with Status Filter

Problem Statement

Build a To-Do app that:

- Adds, deletes, and marks tasks as completed
 - Filters tasks (All / Completed / Pending)
 - Displays count of completed tasks
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Assignment 4

Number Guessing Game with Score Tracking

Problem Statement

Develop a game where:

- System generates a random number (1–100)
 - User guesses the number
 - Feedback is shown (High / Low / Correct)
 - Score decreases on wrong attempts
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Assignment 5

Interactive Quiz Application

Problem Statement

Create a quiz app where:

- Questions are stored as objects
 - One question is shown at a time
 - User selects an answer
 - Score is calculated and shown at the end
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Assignment 6

Digital Clock & Countdown Timer

Problem Statement

- A real-time digital clock
 - A countdown timer that takes user input
 - Alert when time reaches zero
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Assignment 7

Dynamic Table Generator

Problem Statement

Design a program that:

- Takes number of rows and columns as input
- Generates a table dynamically

- Adds buttons to:
 - Add row
 - Delete row
 - Highlight even rows
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Assignment 8

Simple E-Commerce Cart System

Problem Statement

Create a shopping cart where:

- Products are stored as objects
 - User can add/remove items
 - Total price updates dynamically
 - Quantity changes affect total
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Assignment 9

Form Validation System

Problem Statement

Develop a form that:

- Validates name, email, password
- Shows error messages dynamically

- Prevents submission if validation fails
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Assignment 10

Event-Driven Color & Theme Manager

Problem Statement

Create a webpage where:

- User selects theme colors
 - Background, text, and button colors change
 - Selected theme is stored in an object
 - Reset option restores default theme
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